

CHEMICAL MECHANICAL PLANARIZATION OF CONDUCTIVE MATERIAL

Abstract of the Disclosure

5 A process of removing excess conductive material from the exposed surface of a dielectric layer, the process comprising the steps of forming a shield layer on the dielectric layer, forming a sacrificial layer on top of the shield layer, depositing the conductive material on top of the sacrificial layer so that the conductive material is positioned within cavities in the dielectric material, and then using chemical mechanical planarization to
10 remove the excess conductive material and the sacrificial layer. The use of a sacrificial layer interposed between the shield layer and the excess conductive material allows for chemical mechanical planarization to fully remove the sacrificial layer to facilitate more uniform removal of excess conductive material. Moreover, the shield layer is preferably formed of a material selected to be resistant to removal by CMP, such that when the
15 sacrificial layer is removed, an end point can be detected which is indicating that the chemical mechanical planarization is now occurring at the CMP resistant shield layer to thereby result in the halting of the chemical mechanical planarization process at the shield layer. In this way, thinning of the underlying dielectric material during the chemical mechanical planarization step can be reduced.

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